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CADTH Reference List

Post-Exposure Antibiotic Chemoprophylaxis for the Prevention of Invasive Group A Streptococcal Disease

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About CADTH: CADTH is an independent, not-for-profit organization responsible for providing Canada's health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs, medical devices, diagnostics, and procedures in our health care system.

Funding: CADTH receives funding from Canada's federal, provincial, and territorial governments, with the exception of Quebec.

Questions or requests for information about this report can be directed to **requests@cadth.ca**

Key Messages

- No evidence was identified regarding the clinical effectiveness of post-exposure antibiotic chemoprophylaxis for the prevention of invasive group A streptococcal disease in close contacts of people with invasive group A streptococcal disease.
- No evidence was identified regarding the cost-effectiveness of post-exposure antibiotic chemoprophylaxis for the prevention of invasive group A streptococcal disease in close contacts of people with invasive group A streptococcal disease.
- Two evidence-based guidelines were identified regarding the use of post-exposure antibiotic chemoprophylaxis for the prevention of invasive group A streptococcal disease in close contacts of people with invasive group A streptococcal disease.

Research Questions

1. What is the clinical effectiveness of post-exposure antibiotic chemoprophylaxis for the prevention of invasive group A streptococcal (iGAS) disease in close contacts of people with iGAS disease?
2. What is the cost-effectiveness of post-exposure antibiotic chemoprophylaxis for the prevention of iGAS disease in close contacts of people with iGAS disease?
3. What are the evidence-based guidelines regarding the use of post-exposure antibiotic chemoprophylaxis for the prevention of iGAS disease in close contacts of people with iGAS disease?

Methods

Literature Search Methods

A limited literature search was conducted by an information specialist on key resources including MEDLINE, the Cochrane Database of Systematic Reviews, the International HTA Database, the websites of Canadian and major international health technology agencies, as well as a focused internet search. The search strategy comprised both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concepts were antibiotic prophylaxis and invasive group A streptococcal disease. No filters were applied to limit the retrieval by study type. Comments, newspaper articles, editorials, and letters were excluded. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2014 and January 25, 2022. Internet links were provided, where available.

Selection Criteria

One reviewer screened literature search results (titles and abstracts) and selected publications according to the inclusion criteria presented in Table 1. Full texts of study publications were not reviewed. Open access full-text versions of evidence-based guidelines were reviewed when available.

Table 1: Selection Criteria

Criteria	Description
Population	People (any age) who are close contacts of someone with iGAS disease, or people who have been exposed to someone with iGAS disease (any severity)
Intervention	Post-exposure antibiotic chemoprophylaxis (also known antibiotic prophylaxis) (e.g., cephalexin, clarithromycin, clindamycin)
Comparator	Q1 and Q2: No post-exposure antibiotic chemoprophylaxis (e.g., monitoring, watchful waiting); alternative chemoprophylaxis agent Q3: Not applicable
Outcomes	Q1: Clinical effectiveness (e.g., rate of GAS infection, rate of iGAS disease, progression of iGAS disease, mortality, hospitalization) and harms (e.g., adverse events) Q2: Cost-effectiveness (e.g., cost per quality-adjusted life-year gained, cost per unit of health benefit) Q3: Recommendations regarding the use of post-exposure antibiotic chemoprophylaxis for the prevention of iGAS disease (e.g., target group, prophylaxis window, choice of chemoprophylaxis agents)
Study designs	Health technology assessments, systematic reviews, randomized controlled trials, non-randomized studies, economic evaluations, evidence-based guidelines

iGAS = invasive group A streptococcal.

Results

Two evidence-based guidelines[1,2] were identified regarding the use of post-exposure antibiotic chemoprophylaxis for the prevention of iGAS disease in close contacts of people with iGAS disease. However, no health technology assessments, systematic reviews, randomized controlled trials, non-randomized studies, or economic evaluations were identified regarding the clinical effectiveness or cost-effectiveness of post-exposure antibiotic chemoprophylaxis for the prevention of iGAS in close contacts of people with iGAS.

Additional references of potential interest that did not meet the inclusion criteria are provided in Appendix 1.

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References

Health Technology Assessments

No literature identified.

Systematic Reviews

No literature identified.

Randomized Controlled Trials

No literature identified.

Non-Randomized Studies

No literature identified.

Economic Evaluations

No literature identified.

Guidelines and Recommendations

1. Moore DL, Allen UD, Mailman T; Canadian Paediatric Society, Infectious Diseases and Immunization Committee. Invasive group A streptococcal disease: Management and chemoprophylaxis. Ottawa (ON): Canadian Paediatric Society; 2019 Apr: https://cps.ca/en/documents/position/invasive-group-a-streptococcal-disease. Accessed 2022 Jan 28. *Note: See Management of close contacts and Table 1 (Recommended chemoprophylaxis regimens for close contacts of invasive group A streptococcal disease)*
2. Ontario Agency for Health Protection and Promotion (Public Health Ontario), Provincial Infectious Diseases Advisory Committee. Recommendations on public health management of invasive group A streptococcal (iGAS) disease. Toronto (ON): Queen's Printer for Ontario; 2014 Sep: https://www.publichealthontario.ca/-/media/documents/I/2014/igas-management-recommendations.pdf. Accessed 2022 Jan 28. *Note: See 4. Definition of close contacts (page 9)*

Appendix 1: References of Potential Interest

Non-Randomized Studies

No Comparator

3. Lu D, Strauss B, Simkus K, et al. Adverse events following mass antibiotic prophylaxis during a group A streptococcus outbreak in the Canadian Forces Leadership and Recruit School. *Can Commun Dis Rep*. 2020;46(9):264-271. PubMed

4. Mosites E, Frick A, Gounder P, et al. Outbreak of invasive infections from subtype emm26.3 group A streptococcus among homeless adults-Anchorage, Alaska, 2016-2017. *Clin Infect Dis*. 2018;66(7):1068-1074. PubMed

Guidelines and Recommendations

Unclear Methods

5. Alberta public health disease management guidelines: Streptococcal disease group A, invasive. Edmonton (AB): Alberta Health, Government of Alberta; 2021 Oct: https://open.alberta.ca/publications/streptococcal-disease-group-a-invasive. Accessed 2022 Jan 28.

6. Group A streptococcal infections, invasive (iGAS). Yellowknife (NT): Government of Northwest Territories; 2021 Aug: https://www.hss.gov.nt.ca/professionals/sites/professionals/files/resources/cdc-invasive-group-a-streptococcal.pdf. Accessed 2022 Jan 28.

7. Prince Edward Island guidelines for the management and control invasive group A streptococcal disease. Charlottetown (PE) Department of Health and Wellness. Chief Public Health Office. Government of Prince Edward Island; 2018 Mar: https://www.princeedwardisland.ca/sites/default/files/publications/igas_guideline_final_for_the_web_.pdf. Accessed 2022 Jan 28.

8. Invasive group A streptococcal disease. Queensland Health guidelines for public health units. Brisbane (AU): Queensland Government; 2018 Oct: https://www.health.qld.gov.au/cdcg/index/igas. Accessed 2022 Jan 28.

9. Communicable disease control: Invasive group A streptococcal disease. Vancouver (BC): BC Centre for Disease Control; 2017 Sep: http://www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Guidelines%20and%20Manuals/Epid/CD%20Manual/Chapter%201%20-%20CDC/iGAS.pdf. Accessed 2022 Jan 28.

10. iGAS Working Group. UK guidelines for the management of contacts of invasive group A streptococcus infection in community settings. Version 1.5. [draft]. London (GB): Public Health England; 2017: https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.britishinfection.org%2Fapplication%2Ffiles%2F2915%2F0274%2F0373%2F20170811_Draft_PHE__OperationaliGAS_Community_Guidelines._ExtCnslt.DV1.7.docx&wdOrigin=BROWSELINK. Accessed 2022 Jan 28.

11. Centre for Disease Control, Northern Territory of Australia. Public health management of invasive group A streptococcal infection. Casuarina (AU): Department of Health, Northern Territory; 2015 Nov: https://digitallibrary.health.nt.gov.au/prodjspui/bitstream/10137/1187/1/iGAS%20guidelines%20Nov%202015.pdf. Accessed 2022 Jan 28.

Review Articles

12. Laho D, Blumental S, Botteaux A, Smeesters PR. Invasive group A streptococcal infections: Benefit of clindamycin, intravenous immunoglobulins and secondary prophylaxis. *Front Pediatr*. 2021;9:697938. PubMed

13. Wilkins AL, Steer AC, Smeesters PR, Curtis N. Toxic shock syndrome - the seven Rs of management and treatment. *J Infect*. 2017;74 Suppl 1:S147-S152. PubMed

Additional References

14. Soares de Moura C, Bernatsky S, Berard A, Sheely O. Effectiveness of antibiotic prophylaxis in close contacts of invasive group A streptococci infection [Drug Safety and Effectiveness Network (DSEN) abstract]. Ottawa (ON): Canadian Institutes of Health Research; 2021: https://cihr-irsc.gc.ca/e/documents/q20-07_antibiotic-e.pdf. Accessed 2022 Jan 28.

15. Public Health Physicians of Canada. Five things clinicians and patients should question. 5. Don't provide antibiotic prophylaxis to all contacts of severe invasive group A streptococcus (iGAS) infections. Toronto (ON): Choosing Wisely Canada; 2020 Aug: https://choosingwiselycanada.org/public-health/. Accessed 2022 Jan 28.